

(1) (2)

Amendments to the Claims:

Claims 1-159 (Cancelled).

160. (New) A gasification furnace comprising
a gasification chamber for pyrolyzing and gasifying a fuel to produce
combustible gas and char;
a char combustion chamber for combusting the char supplied from said gasification chamber;
a partition wall separating said gasification chamber from said char combustion chamber,
said partition wall having a supply opening located below an interface of a fluidized bed of said
gasification furnace for allowing a fluidizing medium and the char to be supplied directly from said
gasification chamber to said char combustion chamber; and
a settling char combustion chamber in said char combustion chamber and having a return
opening located below the interface of the fluidized bed of said gasification furnace, said settling
char combustion chamber being shaped and arranged to allow the fluidizing medium to be returned
from said char combustion chamber to said gasification chamber by descending through said settling
char combustion chamber and passing through said return opening into said gasification chamber.

161. (New) The gasification furnace according to claim 160, wherein said return opening and
said supply opening are located below an upper surface of a dense bed portion of the fluidized bed
of said gasification furnace.

162. (New) The gasification furnace according to claim 160, wherein said return opening and
said supply opening are located near a furnace bottom of said gasification furnace.

163. (New) The gasification furnace according to claim 160, further comprising a combustible
material supply port above the fluidized bed for supplying combustible material to the fluidized bed.

164. (New) The gasification furnace according to claim 160, further comprising an incombustible material discharge port for discharging incombustible material from said gasification furnace.

165. (New) The gasification furnace according to claim 160, further comprising a heat recovery chamber for recovering heat from the fluidizing medium.

166. (New) The gasification furnace according to claim 160, wherein a gasification agent comprising an oxygen-free gas is supplied to said gasification chamber.

167. (New) The gasification furnace according to claim 160, wherein an oxidizing agent containing oxygen is supplied to said char combustion chamber.

168. (New) The gasification furnace according to claim 160, further comprising a fuel supply port for supplying auxiliary fuel to said char combustion chamber.

169. (New) The gasification furnace according to claim 160, further comprising a slagging furnace for melting ashes contained in the combustible gas and the char which are discharged from said gasification chamber and introduced into said slagging furnace.

170. (New) The gasification furnace according to claim 169, wherein said char combustion chamber is operable to recover ashes from exhaust gas discharged from said char combustion chamber, and to introduce the recovered ashes into said slagging furnace.

171. (New) The gasification furnace according to claim 160, wherein said partition wall comprises a first partition wall, further comprising a second partition wall located in said char combustion chamber so as to define said settling char combustion chamber, said second partition

wall having a lower end in contact with a furnace bottom of said gasification furnace and having an upper end at the interface of the fluidized bed.

172. (New) A gasification furnace comprising:

a gasification chamber for pyrolyzing and gasifying a fuel to produce combustible gas and char;

a char combustion chamber for combusting the char supplied from said gasification chamber;

a settling gasification chamber in said gasification chamber and having a supply opening located below an interface of a fluidized bed of said gasification furnace, said settling gasification chamber being shaped and arranged to allow a fluidizing medium and the char to be supplied from said gasification chamber to said char combustion chamber by descending through said settling gasification chamber and passing through said supply opening into said char combustion chamber; and

a partition wall separating said char combustion chamber from said gasification chamber, said partition wall having a return opening located below the interface of the fluidized bed of said gasification furnace for allowing the fluidizing medium to be returned directly from said char combustion chamber to said gasification chamber.

173. (New) The gasification furnace according to claim 172, wherein said return opening and said supply opening are located below an upper surface of a dense bed portion of the fluidized bed of said gasification furnace.

174. (New) The gasification furnace according to claim 172, wherein said return opening and said supply opening are located near a furnace bottom of said gasification furnace.

175. (New) The gasification furnace according to claim 172, further comprising a combustible material supply port above the fluidized bed for supplying combustible material to the fluidized bed.

176. (New) The gasification furnace according to claim 172, further comprising an incombustible material discharge port for discharging incombustible material from said gasification furnace.

177. (New) The gasification furnace according to claim 172, further comprising a heat recovery chamber for recovering heat from the fluidizing medium.

178. (New) The gasification furnace according to claim 172, wherein a gasification agent comprising an oxygen-free gas is supplied to said gasification chamber.

179. (New) The gasification furnace according to claim 172, wherein an oxidizing agent containing oxygen is supplied to said char combustion chamber.

180. (New) The gasification furnace according to claim 172, further comprising a fuel supply port for supplying auxiliary fuel to said char combustion chamber.

181. (New) The gasification furnace according to claim 172, further comprising a slagging furnace for melting ashes contained in the combustible gas and the char which are discharged from said gasification chamber and introduced into said slagging furnace.

182. (New) The gasification furnace according to claim 181, wherein said char combustion chamber is operable to recover ashes from exhaust gas discharged from said char combustion chamber, and to introduce the recovered ashes into said slagging furnace.

183. (New) The gasification furnace according to claim 172, wherein said partition wall comprises a first partition wall, further comprising a second partition wall located in said gasification chamber so as to define said settling gasification chamber, said second partition wall having a lower

end in contact with a furnace bottom of said gasification furnace and having an upper end at the interface of the fluidized bed.

184. (New) A gasification furnace comprising:

a gasification chamber for pyrolyzing and gasifying a fuel to produce combustible gas and char;

a char combustion chamber for combusting the char supplied from said gasification chamber;

a partition wall separating said gasification chamber from said char combustion chamber, said partition wall having a supply opening located below an interface of a fluidized bed of said gasification furnace for allowing a fluidizing medium and the char to be supplied directly from said gasification chamber to said char combustion chamber; and

a settling char combustion chamber in said char combustion chamber and having a return opening located below the interface of the fluidized bed of said gasification furnace, said settling char combustion chamber being shaped and arranged to allow the fluidizing medium to be returned from said char combustion chamber to said gasification chamber by descending through said settling char combustion chamber and passing through said return opening into said gasification chamber,

wherein said gasification chamber is operable to generate an internal revolving flow of the fluidizing medium.

185. (New) The gasification furnace according to claim 184, wherein said char combustion chamber is operable to generate an internal revolving flow of the fluidizing medium.

186. (New) The gasification furnace according to claim 184, wherein said return opening and said supply opening are located below an upper surface of a dense bed portion of the fluidized bed of said gasification furnace.

187. (New) The gasification furnace according to claim 184, wherein said return opening and said supply opening are located near a furnace bottom of said gasification furnace.

188. (New) The gasification furnace according to claim 184, further comprising a combustible material supply port above the fluidized bed for supplying combustible material to the fluidized bed.

189. (New) The gasification furnace according to claim 184, further comprising an incombustible material discharge port for discharging incombustible material from said gasification furnace.

190. (New) The gasification furnace according to claim 184, further comprising a heat recovery chamber for recovering heat from the fluidizing medium.

191. (New) The gasification furnace according to claim 184, wherein a gasification agent comprising an oxygen-free gas is supplied to said gasification chamber.

192. (New) The gasification furnace according to claim 184, wherein an oxidizing agent containing oxygen is supplied to said char combustion chamber.

193. (New) The gasification furnace according to claim 184, further comprising a fuel supply port for supplying auxiliary fuel to said char combustion chamber.

194. (New) The gasification furnace according to claim 184, further comprising a slagging furnace for melting ashes contained in the combustible gas and the char which are discharged from said gasification chamber and introduced into said slagging furnace.

195. (New) The gasification furnace according to claim 194, wherein said char combustion chamber is operable to recover ashes from exhaust gas discharged from said char combustion chamber, and to introduce the recovered ashes into said slagging furnace.

196. (New) The gasification furnace according to claim 184, wherein said partition wall comprises a first partition wall, further comprising a second partition wall located in said char combustion chamber so as to define said settling char combustion chamber, said second partition wall having a lower end in contact with a furnace bottom of said gasification furnace and having an upper end at the interface of the fluidized bed.

197. (New) A gasification furnace comprising:

a gasification chamber for pyrolyzing and gasifying a fuel to produce combustible gas and char;

a char combustion chamber for combusting the char supplied from said gasification chamber;

a settling gasification chamber in said gasification chamber and having a supply opening located below an interface of a fluidized bed of said gasification furnace, said settling gasification chamber being shaped and arranged to allow a fluidizing medium and the char to be supplied from said gasification chamber to said char combustion chamber by descending through said settling gasification chamber and passing through said supply opening into said char combustion chamber; and

a partition wall separating said char combustion chamber from said gasification chamber, said partition wall having a return opening located below the interface of the fluidized bed of said gasification furnace for allowing the fluidizing medium to be returned directly from said char combustion chamber to said gasification chamber,

wherein said char combustion chamber is operable to generate an internal revolving flow of the fluidizing medium.

198. (New) The gasification furnace according to claim 197, wherein said gasification chamber is operable to generate an internal revolving flow of the fluidizing medium.

199. (New) The gasification furnace according to claim 197, wherein said return opening and said supply opening are located below an upper surface of a dense bed portion of the fluidized bed of said gasification furnace.

200. (New) The gasification furnace according to claim 197, wherein said return opening and said supply opening are located near a furnace bottom of said gasification furnace.

201. (New) The gasification furnace according to claim 197, further comprising a combustible material supply port above the fluidized bed for supplying combustible material to the fluidized bed.

202. (New) The gasification furnace according to claim 197, further comprising an incombustible material discharge port for discharging incombustible material from said gasification furnace.

203. (New) The gasification furnace according to claim 197, further comprising a heat recovery chamber for recovering heat from the fluidizing medium.

204. (New) The gasification furnace according to claim 197, wherein a gasification agent comprising an oxygen-free gas is supplied to said gasification chamber.

205. (New) The gasification furnace according to claim 197, wherein an oxidizing agent containing oxygen is supplied to said char combustion chamber.

206. (New) The gasification furnace according to claim 197, further comprising a fuel supply port for supplying auxiliary fuel to said char combustion chamber.

207. (New) The gasification furnace according to claim 197, further comprising a slagging furnace for melting ashes contained in the combustible gas and the char which are discharged from said gasification chamber and introduced into said slagging furnace.

208. (New) The gasification furnace according to claim 207, wherein said char combustion chamber is operable to recover ashes from exhaust gas discharged from said char combustion chamber, and to introduce the recovered ashes into said slagging furnace.

209. (New) The gasification furnace according to claim 197, wherein said partition wall comprises a first partition wall, further comprising a second partition wall located in said gasification chamber so as to define said settling gasification chamber, said second partition wall having a lower end in contact with a furnace bottom of said gasification furnace and having an upper end at the interface of the fluidized bed.